

## REMARKS

The asserted combination that includes Shi and Altekhar is implausible and unworkable. Shi requires that the hybrid circuit must be turned off. The hybrid circuit would prevent receiving when sending and sending when receiving, as desired by Shi. Still another problem with Shi is that Shi teaches away from the claimed invention. Specifically, in paragraph 38, Shi notes that one could determine the time delay between an excitation signal and the reflected response which depends upon the loop length  $D$ . See paragraph 38. But as Shi notes, "unfortunately, loop attenuation is often so large that the reflection signal is too weak to be detected over long loops, because the amplitude of the reflection signal is dwarfed by the transient response of the forward going signal." See paragraph 39.

In claim 1 this problem is overcome by using the fuzzy inference system controller coupled impedance mismatch software, the controller to adjust the impedance mismatch hardware. The fuzzy inference system controller "adjusts the impedance of one or more components of the impedance mismatch hardware to modify one or more characteristics of the received signal." After the received signal is modified to a "maximal value," a time between the transmit signal and the receive signal is used to determine the length of a telephone loop. In other words, the problem noted by Shi is overcome using the fuzzy inference system controller to adjust the impedance to cause the received signal to be modified to a maximal value. Then the echo can be detected.

Altekhar does not help to overcome this deficiency because Altekhar is trying to cancel echoes, not maximize them. See Altekhar at paragraph 2 where he describes the echo signals as acting as noise and an impediment to downstream data transmission. Then, in paragraph 3, he talks about how echo signals are reduced. Then, in paragraph 5, he explains that his hybrid is echo canceling. In short, Altekhar is trying to cancel the echoes, which he sees as noise, and he is not doing any testing of loop length. See paragraphs 30 and 31. In paragraph 30, Altekhar explains that a particular hybrid setting that may be expected to result in known impairment or highest data rate is generally identified by calculation. Then, paragraph 31 explains that ideally the hybrid setting that allows the least impairment from echo signals to enter the received signal is generally selected.

Thus, the combination of Shi and Altekarr results in nothing useful and, certainly, the minimization of the return echo signals, not their maximization, as explained in the present specification.

Thus, the rejection does not work because:

(1) Shi teaches away. He says not to use the time difference approach because the returning signals cannot be distinguished from noise;

(2) Altekarr minimizes echoes rather than maximizing them, so if Altekarr was combined with Shi, it would just create a bigger problem; and

(3) there is no teaching of a test method using the maximization of echoes by adjustment of impedance.

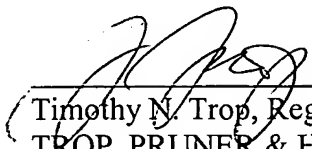
The comment in the Interview Summary is not really understood since it appears that claim 1 does capture the elements of Figure 3. For example, diamond 340, in Figure 3, calls for determination of whether the echo signal is maximum and that is determined in the last paragraph of claim 1 "wherein after the received signal is maximized to a maximal value." The next step 360 is to calculate the time delay and derive loop length. The rest of claim 1 calls for "the time between the transmit and the receive signal is used to determine a length of the telephone loop." Moreover, block 350 talks for adjusting values using fuzzy inferencing, which is exactly what the third paragraph of claim 1 calls for: "a fuzzy inference system controller coupled to the impedance mismatch hardware, said controller to adjust the impedance mismatch hardware."

Thus, it is respectfully submitted that claim 1 does track Figure 3 and, therefore, for the reasons described above, should be in condition for allowance.

On the same basis, reconsideration of the other claims is respectfully requested.

Respectfully submitted,

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